Overcoming resistance to standard CD19-targeted CAR T using a novel triple antigen targeted vector

Grant Award Details

Overcoming resistance to standard CD19-targeted CAR T using a novel triple antigen targeted vector

Grant Type: Therapeutic Translational Research Projects

Grant Number: TRAN1-13996

Investigator:

Name:	William Murphy
Institution:	University of California, Davis
Type:	PI

Award Value: $4,168,679

Status: Pre-Active

Grant Application Details

Application Title: Overcoming resistance to standard CD19-targeted CAR T using a novel triple antigen targeted vector

Public Abstract:

Translational Candidate

A tri-specific chimeric antigen receptor (CAR) T cell product that will prevent relapse since targets 3 different tumor antigens

Area of Impact

Relapse associated with single or double antigen-targeted CAR T cells

Mechanism of Action

By being able to target 3 different tumor antigens simultaneously on a single CAR product, there is much less of a chance the tumor evasion associated by loss of a single antigen and relapse will occur.

Unmet Medical Need

Relapse from cancer due to antigen loss is considered a major impediment for CAR therapy. Further, by having one vector which can target all three major tumor antigens, this vector could be more widely applicable for many B cell malignancies.

Project Objective

Data needed for pre-IND filing

Major Proposed Activities

- Determine the efficiency, stability and reproducibility of the DuoCAR vector on T cell transduction
- Determine the specificity and efficacy of the DuoCAR T product versus conventionally used CD19 CAR T cells
- Determine any potential off-target effects or toxicities of the DuoCAR T product using a closed GMP manufacturing system

Statement of Benefit to California:

Experience with commercial CAR-T products has identified that access to CAR-T therapy is a key bottleneck to equitable use of this life-saving intervention. The other major issue is efficacy and cancer relapse. UC Davis has the largest geographic catchment of any UC Medical Center enabling it to play a crucial role in enhancing California patient participation in stem cell trials. Development of a tri-specific vector also increases patient use by targeting a broader array of B cell cancers.
